

QIPs Financing of the United Nations Multidimensional Integrated Stabilization Mission in Mali (MINUSMA) and Agriculture: Case of the Commune of Bourem Sidi Amar in the Timbuktu Region of Mali

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Abstract

The objective of this study is to analyze the impact of QIPs funding from the United Nations Multidimensional Integrated Stabilization Mission in Mali (MINUSMA) on the yields per hectare of certain crops and on the incomes of farmers in the commune of Bourem Sidi Amar in the region of Timbuktu in Mali. Data collected through questionnaires from 52 QIPs-funded farmers were analyzed quantitatively and information was summarized using averages in tables. The one-sample t-test was used to compare yields per hectare and the average benchmark yield per crop. The paired-samples t-test was also used to compare farm operator incomes before and after funding. At the 5% significance level, our results show that the average yields per hectare of rice, wheat, onion, and anise crops are higher than the average reference yields of these same crops per hectare. This means that the average yields of these crops increased after the financing. The average income after funding is higher than the average income before funding. So the farmer's income increased after the financing. The results of this study could help MUNISMA and the Malian State to strengthen their participation in economic recovery in areas affected by the security crisis and may constitute an interesting contribution to the scientific literature.

Keywords: Yield, Crops, QIPs Funding, MUNISMA, Bourem Sidi Amar, Timbuktu.

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Introduction

In 2012, the commune of Bourem Sidi Amar, like the other localities in northern Mali, was severely affected by the armed conflict in the north. This caused the displacement of most populations inside and outside the country. A large number of unemployed young people from this village have been recruited by the various armed groups present on the spot. Before the crisis, they took care of village agriculture through the support of their parents in the exploitation of village irrigated perimeters, on which they cultivated rice during the normal season, wheat, anise, onion and cumin during the off season.

To reduce community violence and succeed in its mission to maintain peace and social cohesion in Mali, the United Nations Multidimensional Integrated Stabilization Mission in Mali (MINUSMA) has initiated a funding program for quick impact projects (QIPs) to help people and revive economic activities.

Most of this funding (88%) is intended for populations in the northern and central regions of Mali who are victims of the growing insecurity that has hit the country since 2012 (MINUSMA, 2020). Its purpose is to bring the populations and the mission closer together, to create a climate conducive to peace and social cohesion and to strengthen the resilience capacities of low-income economic agents.

According to MINUSMA, 9% of the financing (i.e. 1.3 billion FCFA) was devoted to the local economy.

It is within the framework of this program that MINUSMA financed, in 2017, the development of certain arable land in the village of Bourem Sidi Amar in the circle of Diré (region of Timbuktu in Mali).

According to Touré agricultural producer, the security crisis has reduced the average production of cereals and the average income of producers. Due to a lack of profitability, several agricultural producers had to change jobs, others found themselves unemployed.

The developments financed by MINUSMA have enabled several producers to resume their cultivation activities and diversify their plant collections (Maïga, farmer).

According to Touré, an agricultural services officer, even if the training and equipment have enabled

several former dairy farmers, who had abandoned the profession, to resume production, the recipes and profitability have not changed significantly.

To our knowledge, no study has been conducted to verify the impact of this funding on the yields per hectare of the crops grown in this village. This article aims at this task. This work aims to analyze the impact of QIPs funding from MINUSMA on the yields per hectare of crops grown in the commune of Bourem Sidi Amar in the region of Timbuktu in Mali.

1. Definition of key concepts and literature review

1.1. Definition and objectives of QIPS

United Nations Quick Impact Projects (QIPS) aim to promote trust between the people and the mission, serve the communities, support the mandate and the national process of peace and community reconciliation (Brahimi, 2004).

These projects have a maximum cost of US\$50,000 and a duration not exceeding 6 months (MINUSMA, 2017). They also contribute to strengthening national institutions to enable:

- The gradual return of state authority;
- Better provision of basic social services;
- Reconciliation and civilian protection initiatives.

Indeed, this program set up by the General Assembly of the United Nations, gives peacekeeping missions and particularly MINUSMA the means to build trust and provide communities affected by conflict with responses that bring hope to their most pressing concerns: creation of emergency jobs and support for small income-generating initiatives, provision of basic social services (such as health centres, drilling of wells, rehabilitation and construction of schools, markets, etc.), rehabilitation of administrative infrastructure (prefectures, town halls, police stations, courthouses, etc.) but also support for community security needs (LEPIN, 2015).

These various initiatives offer the first peace dividends to the populations and support the Mission's efforts in terms of community dialogue, the restoration of State authority, and also the protection of civilians.

These projects must have a rapid and lasting effect that responds to the priority needs of the population and aims to establish a climate of confidence in the peace process, the Mission and its mandate (UN, 2017).

Since its creation in 2013 until June 30, 2020, the Mission has funded 616 projects for approximately \$23.9 million. Between July 1, 2020 and June 30, 2021, a budget of \$4.8 million is allocated to around 120 QIPs (MINUSMA, 2020). These projects will mainly benefit the North and Center regions and will support requests from the Malian government, international and national NGOs, international agencies and civil society. All projects are executed through local partners and companies.

These projects have contributed, among other things, to strengthening social cohesion; improve access to basic health services and water, strengthen security; revitalize basic education, prevent conflicts and promote the use of pastoral and agricultural resources; to strengthen the economic resilience of households affected by the crisis; create temporary and long-term jobs; rehabilitate cultural heritage (MINUSMA, 2021).

1.2. Funding for the development of arable land in Bourem Sidi Amar.

In 2017, MINUSMA financed to the tune of 55 million FCFA a project to develop a perimeter of 40 hectares for the cultivation of rice, wheat, onion, anise and cumin during the counter season. This perimeter will be exploited by 300 operators, including 160 young ex-combatants, including 25 women, all from the eight villages that make up the commune of Bourem, Sidi Amar (MINUSMA, 2020).

The work concerned the construction of a water reception basin, the construction of a main canal and tertiary canals, a crossing structure (bridge), a storage warehouse, a block of two latrines. The beneficiaries also received a large batch of adequate equipment and seeds, a four-cylinder 40 horsepower pump unit, 120 liters of diesel, 12 tons of fertilizer including eight tons of urea and four tons of DAP, four tons and a half of seeds, as well as the training of the management committee in a tool for managing village irrigated perimeters (PIV) (MINUSMA, 2020).

According to Mamane Sani Moussa, Acting Head of Office, this funding can contribute to alleviating the suffering of communities affected by the conflict in an impartial manner, “.

2. Study methodology

2.1. Population and sample

This study is a field survey that used a descriptive quantitative approach to analyze the impact of United Nations QIPs funding on the yields per hectare of different crops and the incomes of farmers in Bourem Sidi Amar in Mali.

The target population is made up of 300 farmers benefiting from United Nations QIPs funding. The data was collected over the period March-June 2022.

For unacknowledged reasons, only 52 farmers agreed to answer our questionnaires.

2.2. Study variables

The variables studied are recorded in Table 1

Table 1: Study variables

Variable	Definition	Kind
Average yield per hectare per crop	Relationship between the quantity harvested and the factor of production (land, seed, labour, water, etc.) (Morlon et al.1986)	continued
Benchmark average return	A level of yield used by farmers as a reference yield to set yield targets (Kumar et al. 2014).	continued
Farm operator income	This is the money a farmer earns per year, an amount that can include subsidies and subsidies.	continued

Source: Authors

2.3. Analysis method and tools

To compare pre- and post-financing income, we use a t-test for comparison of means for matched samples. This test consists in arbitrating between a null hypothesis H_0 stipulating the equality between the average income of the sample before and the average income of the sample after and the alternative hypothesis in favor of the difference between these two average incomes (ALDRICH, 2016).

In other words, we put:

H_0 : average income after = average income before

H_1 : average income after \neq average income before

If the probability p of the test is less than 5%, the null hypothesis is rejected in favor of its alternative and it is concluded that the average incomes are significantly different.

In this case:

- if the difference is negative then the average income after the financing is significantly lower than the average income before;

- if the difference is positive then the average income after the financing is significantly greater than the average income before.

To compare the average yield with the benchmark average yield, a one-sample t-test was used (JONKER, 2010).

In this study, the hypotheses to be tested are:

To compare farmers' incomes:

H_0 : average income after = average income before

H_1 : average income after \neq average income before

To compare the average yield to the benchmark yield:

1/ H_{a0} : average yield per hectare of rice = average reference yield per hectare of rice.

H_{a1} : the average yield per hectare of rice \neq average reference yield per hectare of

2/ H_{b0} : average yield per hectare of wheat = average reference yield per hectare of wheat.

H_{b1} : the average yield per hectare of wheat \neq average reference yield per hectare of wheat.

3/ H_{c0} : average yield per hectare of onion = average reference yield per hectare of onion.

H_{c1} : the average yield per hectare of onion \neq average reference yield per hectare of onion.

4/ H_{d0} : average yield per hectare of anise = average reference yield per hectare of anise.

H_{d1} : the average yield per hectare of anise \neq average reference yield per hectare of anise.

5/ H_{e0} : average yield per hectare of cumin = average reference yield per hectare of cumin.

H_{e1} : the average yield per hectare of cumin \neq average reference yield per hectare of cumin.

Data were processed and analyzed using SPSS 28 software.

3. Results and interpretations

Table 2 shows that the one-sample t-tests for rice, wheat, onion and anise crop yields with significance less than 5% are statistically significant. crops of rice, wheat, onion, and anise are higher than the average reference yields of these same crops per hectare. This means that the average yields of these crops increased after the financing.

The significance threshold of the test for the average yield of the cumin crop is greater than 5% so it is not statistically significant.

Table 2: Comparison of average yields with average reference yields

Yield per hectare	Test value	t	ddl	Sig (bilateral)	Average difference	Situation
Yield of rice (ton/ha)	4,5	21	1	0,030	3,15	The average rice yield is higher than the reference yield
Wheat yield (ton/ha)	2,2	17	1	0,037	0,85	The average wheat yield is higher than the reference yield
Onion yield (ton/ha)	9,5	19,25	1	0,033	7,7	The average onion yield is higher than the reference yield
Yield of anis (kg/ha)	431,5	13,486	1	0,047	236	The average anis yield is higher than the reference yield
Yield du cumin (kg/ha)	63,5	2,182	1	0,274	12	The test is not statistically significant

Source: Authors

The significance level of the paired-samples t-test applied to annual income before and after funding is $0.034 < 5\%$, so it is statistically significant (see Table 3).

The difference (93,000 FCFA) between the average annual income after financing and the average annual income before financing is positive. This means that the average income after funding is higher than the average income before funding. So the farmer's income increased after the financing.

Table 3: Comparison of average annual income before and after the project

	Difference mean	Ecart type	Mean standard error	t	ddl	Sig (bilateral)	Situation
Average annual income after			5000				The average annual income after financing is higher than the average annual income before
Average annual income before	93000	7071,07		19,6	1	0,034	

Source : Authors

Conclusion

This study aimed to analyze the impact of QIPs funding from the United Nations Multidimensional Integrated Stabilization Mission in Mali (MINUSMA) on the yields per hectare of certain crops and on the incomes of agricultural producers in Bourem Sidi Amar in the Timbuktu region in Mali.

The empirical tests (one-sample t-test and paired-sample t-test) were based on data collected from 52 farmers in Bourem Sidi Amar.

With a margin of error of 5%, our results show that the average yields per hectare of rice, wheat, onion, and anise crops are higher than the average reference yields of these same crops per hectare. This means that the average yields of these crops increased after the financing. The average income after funding is higher than the average income before funding. So the farmer's income increased after the financing.

The results of this study comfort MINUSMA in its expectations and could help it to strengthen its participation in economic recovery in areas affected by the security crisis. They can also constitute an interesting contribution to the scientific literature on the subject.

As a limitation, it should be noted the lack of sufficient data due to a lack of financial means.

For future research, we may suggest expanding the sample to better understand the impact of QIPs funding on the average yield of cumin cultivation.

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